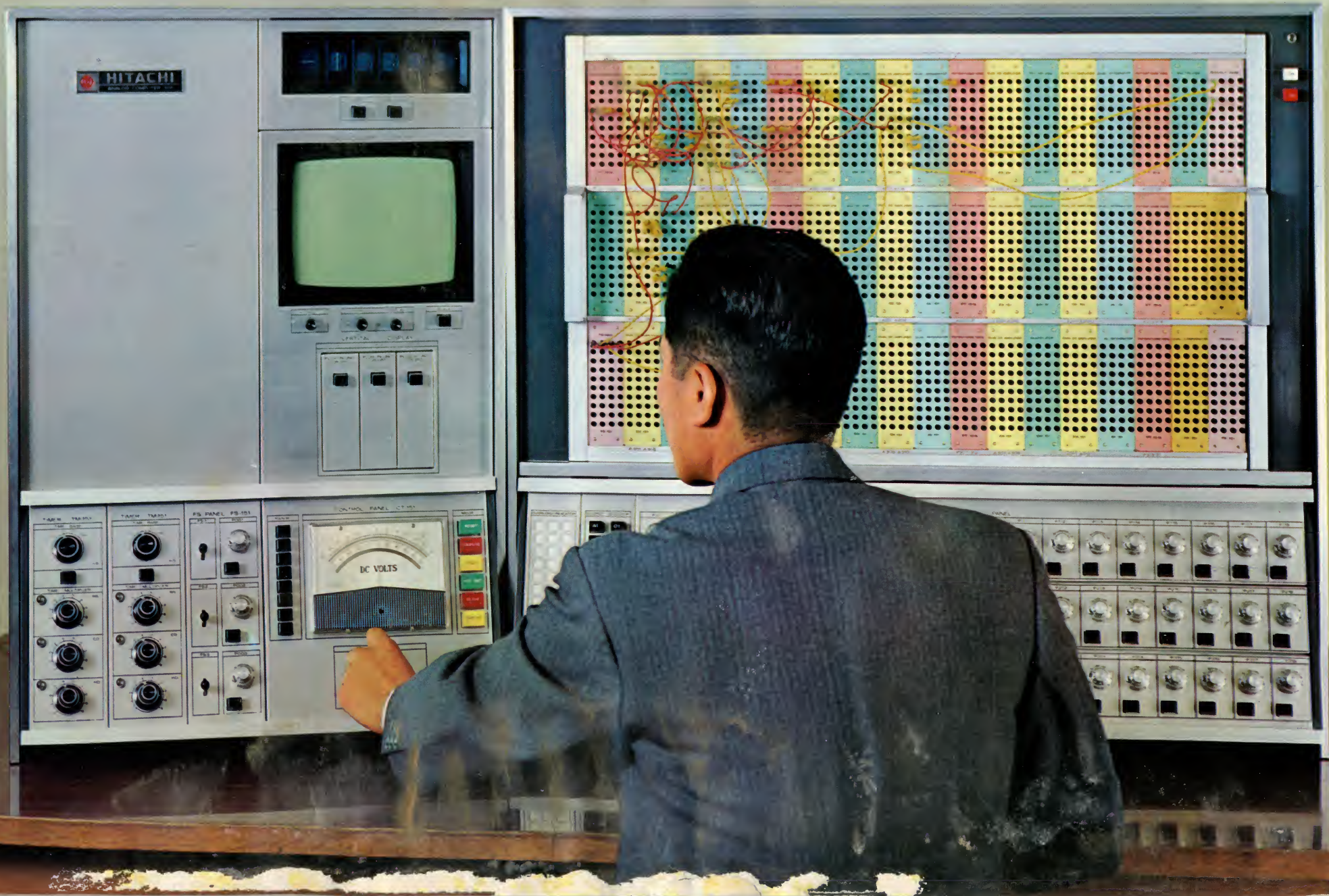


HITACHI 505 *analog computer*



INTRODUCTION

The Hitachi 505 introduces to the computer user the efficiency of a completely new, low cost, advanced analog computer built to the highest quality standards. The 505 provides a number of new features through state-of-the-art design techniques and components in addition to operational capabilities normally found only on high cost, big computers. A new level of computing efficiency is made possible through the use of "operator convenience engineering"; in the design of the main computer particular attention was given to the operating console portion.

Routine simulations as well as complex and difficult computations requiring high speeds, unique function generation capabilities and precision can be solved on the 505 by the engineer, researcher or scientist.



HITACHI 505 ANALOG COMPUTER

The computer basically consists of solid-state D.C. amplifiers provided with FET chopper circuits. These amplifiers have a 100 volt 20 ma output with low drift and high S/N ratio for high accuracy.

Iterative computations are facilitated by special Compiled Operation Modules containing networks used in automatic parameter changing, boundary value problems and other functions necessary in iterative operations.

Flexible selection of integrator gains, from 1 to 1,000, and the ratio between real time and time in the high speed repetitive mode of 1 to 0.001 permits easy operator control for computing and readout speed.

A logic control panel furnishes digital logic components for use with analog computing elements for the solution of intricate iterative and logical computations.

The computer panel assembly has provisions for 54 modules including 40 operational amplifiers and 19 non-linear and dual integrator modules. A wide selection of interchangeable modular non-linear computing components is available.

Readout of solutions is obtained with a 4 digit DVM or a 3 channel 9" oscilloscope. The solutions are also available externally for a X-Y plotter or other monitoring devices.

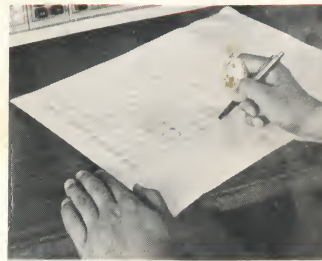
The Hitachi 505 furnishes a number of functions that permit efficiency and flexibility over a wide range of applications.

A three-channel 9" oscilloscope provides a continuous display of solutions, and is arranged so that three solutions may be observed simultaneously. Electronically generated scales are displayed on the tube face and provide an accurate reference during readout of solutions.

A large selection of function generators is available for special purposes, including: 3 different fixed breakpoint function generators; 1 variable breakpoint function generator; 2 trigonometric function generators; 2 log function generators; $2x^2$ function generators; and a new two-variable function generator. The two-variable function generator, in particular, is a novel silicon transistor device featuring 25 non-interacting fixed breakpoints.

The completely shielded, color coded patchboard has been designed with the programmer in mind. Most connections may be made with low capacity bottle plugs. Also, a unique method for temporary labeling of the potentiometers is provided.

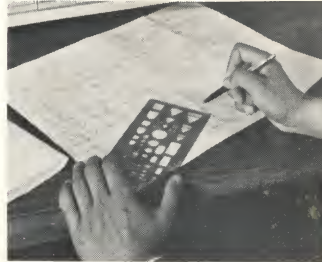
FIVE STEPS IN ANALYSIS OF PROBLEMS USING THE HITACHI 505



1

Statement of the problem

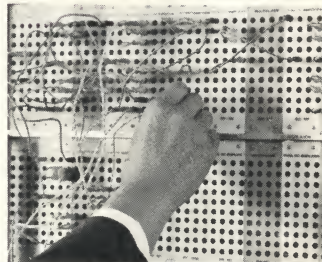
The problem to be analyzed should be expressed as a system of differential equations.



2

Programming

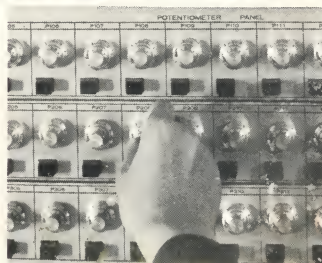
A block diagram representing these mathematical formulas on the computer may be obtained by the interconnection of computer modules.



3

Patching

Hitachi 505 computer modules located in the patchpanel are interconnected by patch cords to simulate a given problem.



4

Coefficient set up

The desired parameters are set up by means of the corresponding potentiometers.



5

Solution

The problem solution is displayed on the oscilloscope screen or DVM located in the control module. Provisions are also made for recording the solution on an external device such as an X-Y recorder or a strip chart recorder.



Head Office: 4, 1-chome, Marunouchi, Chiyoda-ku,
Tokyo

Tel. Tokyo (212) 1111 (80 lines)

Cable Address: "HITACHY" TOKYO

Codes: All Codes Used

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Phone (213) 477-1039

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Please specify model number and model name

Place your order directly with our engineering representative in your area or with us.

Make your order out to WEST ELEVEN INC. in care of your local representative.

We acknowledge all orders. To facilitate acknowledgement on your own forms, please send them to us so that we can complete and return promptly.

SHIPMENTS

All shipments to destinations in the United States and Canada are made directly from our office in Los Angeles.

Billing is F. O. B. Los Angeles.

Shipments up to 20 lbs. shall be made by parcel post; over 20 lbs. will be shipped by express or truck. If requested we will ship via air express; air freight; air parcel post. All freight charges are prepaid and billed on the invoice unless the customer requests otherwise.

INVOICING

All invoices are normally made one day after shipment has been made. Terms are net 30 days.

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ONE YEAR WARRANTY: All Hitachi products are warranted against defects in materials and workmanship for a period of one year after date of shipment. Hitachi's obligation is limited to replacing, repairing, or adjusting products (except tubes) which are proved to be defective during the warranty period. Hitachi is not liable for consequential damages.

REPAIRS

If you wish to return equipment for repairs, please contact your local representative or West Eleven Inc. directly. All equipment unless you are instructed otherwise should be returned to West Eleven Inc., 11836 San Vicente Blvd., Los Angeles, California 90049, Attention: Engineering Service. Enclose a copy of your letter giving model number, model name, serial number, date received, purchase order number, and your exact return address. Send original letter to Engineering Service West Eleven Inc.

PRICE CHANGES

All published prices are subject to change without notification.

STATE AND LOCAL TAXES

All prices shown on West Eleven, Inc. price lists are given exclusive of all state and local taxes. If requested, state and local taxes will be shown on invoice.

MINIMUM ORDER

The minimum order is \$15.00

OPTIONAL ITEMS

FG-153	\$ 502.00
FG-256 C	\$ 1,460.00
FG-256 S	\$ 520.00
FG-157	\$ 82.00
FG-057	\$ 432.00
TD-151	\$ 187.00
AO-151	\$ 292.00
MC-151	\$ 41.00
TM-251	\$ 409.00
CT-252	\$ 210.00
CU-151	\$ 490.00
LG-151	\$ 210.00
FF-151	\$ 218.00
MM-151	\$ 111.00
RC-151	\$ 397.00
TR-153	\$ 210.00
PS-052	\$ 234.00
UM-251	\$ 292.00
OS-251	\$ 1,168.00
PC-001	\$ 1.20
PN-001	\$.60
AB-505	\$ 175.00
TOOLS	\$ 17.50

HITACHI 505 ANALOG COMPUTER - PRICE LIST

April 1966

MODEL		505-10		505-20		505-30		505-40		505-80	
Component	Unit Price	Qty.	Price	Qty.	Price	Qty.	Price	Qty.	Price	Qty.	Price
DA-151	333.00	5	1,665.00	10	3,330.00	15	4,995.00	20	6,660.00	40	13,320.00
IN-151	199.00	2	398.00	4	796.00	6	1,194.00	8	1,592.00	16	3,184.00
PT-251	491.00	1	491.00	1	491.00	2	982.00	3	1,473.00	6	2,946.00
PT-151	45.00	3	135.00	3	135.00	6	270.00	9	405.00	18	810.00
EM-151	486.00					3	1,458.00	5	2,430.00	10	4,860.00
FG-151	35.00					1	35.00	2	70.00	4	140.00
FG-051A	183.00					1	183.00	2	366.00	4	732.00
FG-051B	183.00					1	183.00	2	366.00	4	732.00
FG-152	41.00					1	41.00	1	41.00	2	82.00
FG-052	183.00					2	366.00	2	366.00	4	732.00
FG-154A	568.00							1	568.00	1	568.00
FG-155A	459.00							1	459.00	1	459.00
CP-151	178.00					1	178.00	1	178.00	2	356.00
FD-151	193.00	1	193.00	1	193.00	1	193.00	1	193.00	2	386.00
TR-151	45.00					1	45.00	1	45.00	2	90.00
OC-151	96.00	1	96.00	1	96.00	1	96.00	1	96.00	1	96.00
FS-151	45.00	1	45.00	1	45.00	1	45.00	1	45.00	1	45.00
TW-051	94.00					1	94.00	1	94.00	2	188.00
OL-251	110.00	1	110.00	1	110.00	1	110.00	1	110.00	2	220.00
SL-251	110.00	1	110.00	1	110.00	1	110.00	1	110.00	2	220.00
CT-251	438.00	1	438.00	1	438.00	1	438.00	1	438.00	1	438.00
PS-051	788.00	1	788.00	1	788.00	1	788.00	1	788.00	2	1,576.00
CS-505A	1,460.00	1	1,460.00	1	1,460.00	1	1,460.00	1	1,460.00	2	2,920.00
TM-253	130.00	1	130.00	1	130.00	1	130.00	1	130.00	1	130.00
CS-505B	438.00	1	438.00	1	438.00	1	438.00	1	438.00	1	438.00
PP-505	203.00	1	203.00	1	203.00	1	203.00	1	203.00	2	406.00
PK-505	158.00	1	158.00	2	316.00	2	316.00	3	474.00	5	790.00
MU-051	47.00	1	47.00	1	47.00	1	47.00	1	47.00	1	47.00
FU-051	53.00	1	53.00	1	53.00	1	53.00	1	53.00	1	53.00
Handle	9.50	1	9.50	1	9.50	1	9.50	1	9.50	1	9.50
Cable	70.00									1	70.00
DVM	1,750.00			1	1,750.00	1	1,750.00	1	1,750.00	1	1,750.00
Total Price		\$ 6,967.00		\$10, 938.00		\$16, 210.00		\$21, 457.00		\$38, 793.00	

WATCH FOR HITACHI

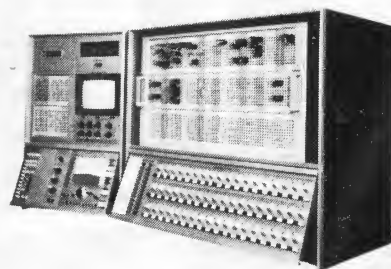
505 ANALOG COMPUTER

that outperforms competition, costs 20% less and is now touring the United States. If you're one of the 55,000 key scientists and engineers who buy capital equipment and live in or near one of the country's 20 major technology centers, you'll soon have a first-hand chance to see and operate the Hitachi 505 Analog Computer and compare its technical and price advantages.

The brief specifications only hint at the 505's superiority. Use the coupon for complete technical literature and more information on when the 505 will visit your area.

Computing Voltage Level ± 100 v.

- Expandable to 120 Amplifiers
- Solid state, FET stabilized amplifier chopper
- All-silicon DVM, 5 digits + sign, readout storage, DC, ratio and autorange
- Scope with electronic grid, 0.1% accuracy
- All-aluminum shielded patchboard
- Exclusive two-variable function generator
- Integral Digital Logic
- \$16,543 for 32-amplifier model (20% less than 32-amplifier competitive computer).



SIGN UP HERE FOR YOUR 505 COMPUTER DEMONSTRATION!

☐ I would like to see the 505 demonstration. Tell me when you'll be in my area.
☐ Send me descriptive literature and price list.
☐ I can't wait for a demonstration. Send a representative to see me right away.



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COMPARE

The HITACHI 505 Analog Computer is better than its U. S. counterpart on nine key specs. And it costs 20% less.

The Hitachi 505 Analog Computer will soon begin a nationwide demonstration tour so that scientists and engineers can personally compare and evaluate the design, the features and the economic and performance advantages of the Hitachi unit. In the meantime, get a head start on your buying decision by carefully reviewing the chart below.

COMPARISON OF TWO LEADING DESK-TOP ANALOG COMPUTERS.

	HITACHI 505	EAI TR-48*
Date Designed	1965	1961
Computing Voltage Level	± 100 volts	± 10 volts
Expansion Capability	120 Amplifiers	58 Amplifiers
Amplifier Chopper	Solid State, FET Stabilized	Electromechanical
Digital Voltmeter	All Silicon, 5 Digit + Sign, Readout storage, DC, ratio and autorange	4½ Digit Readout
Solution Display Scope	Electronic Grid provides + 0.1% accuracy	Mechanically-Generated Scale
Patchboard	All-aluminum shielded	Plastic, unshielded
Function Generator	Exclusive Two-variable Function Generator	Not available
Digital Logic	Integrated Digital Mode Control Unit, \$3000	Separate Unit DES-30, \$5000-10,000
Price	505-32 (32 Amplifiers) \$16,543	TR-48-2 (32 Amplifiers) \$21,197

*All specifications and prices from manufacturer's published literature.

Write or call today for complete technical data and prices and to learn when the demonstration tour will visit your area. Ask for Data File H505-A.



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